

Application No.: 10/522,887
Amendment under 37 CFR 1.111
Reply to Office Action dated June 4, 2007
December 4, 2007

IN THE CLAIMS

Please substitute the following claims for the pending claims with the same numbers respectively:

Claim 1 (Currently amended): A nitride semiconductor light-emitting device comprising: ~~a substrate; a layered portion emitting light disposed on the substrate, the layered portion a~~ plurality of structured portions, each of the structured portions including an n-type semiconductor layer provided on a lower side, an active layer, and a p-type semiconductor layer [[:]]provided on an upper side, an active layer between the n-type semiconductor layer and the p-type semiconductor layer, and an n-electrode, n-electrode; and

wherein each of the layered portion structured portions has at least an inclined periphery side surface at which the surface of the n-type semiconductor layer is exposed and a lower surface with a larger width than a width of the upper side thereof in sectional view, and the n-electrode is n-electrode has a plurality of contact portions disposed on the surface of the n-type semiconductor layer in each of the structured portions.

Claim 2 (Currently amended): The nitride semiconductor light-emitting device according to claim 1, wherein the n

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~~electrode~~ n-electrode surrounds ~~the layered portion~~ each of the structured portions.

Claim 3 (Currently amended): The nitride semiconductor light-emitting device according to claim 1, further comprising a substrate, and the plurality of the structured portions being disposed on the substrate;

wherein the ~~n-electrode~~ n-electrode continuously extends to the lower surface of the substrate through the side surfaces of the substrate.

Claim 4 (Currently amended): The nitride semiconductor light-emitting device according to claim 1, wherein ~~the layered portion~~ each of the structured portions has at least one of a circular shape and a rectangular shape.

Claim 5 (Currently amended): The nitride semiconductor light-emitting device according to claim 1, wherein ~~the layered portion~~ each of the structured portions has at least one of a hexagonal shape and a polygonal shape.

Claim 6 (Cancelled):

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Claim 7 (Currently amended): The nitride semiconductor light-emitting device according to claim [[6]] 1, wherein ~~the respective n-electrodes for the layered portions~~ the structured portions are respectively spaced away from each other, and the n-electrode has an interconnect portion extended from the contact portions, and the contact portions are connected to each other ~~to define a common electrode~~ with the interconnect portion therebetween.

Claim 8 (Currently amended): The nitride semiconductor light-emitting device according to claim 7, wherein the ~~layered~~ structured portions have respective ~~p-ohmic electrodes~~ p-electrodes in ohmic contact with the respective p-type semiconductor layers, and the ~~p-ohmic electrodes~~ p-electrodes are connected to each other.

Claim 9 (Currently amended): The nitride semiconductor light-emitting device according to claim 1, further comprising a reflection layer covering the ~~layered portion~~ structured portions.

Claim 10 (Currently amended): The nitride semiconductor light-emitting device according to claim 9, wherein the reflection

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layer is ~~[[of]]~~ a metal layer covering the ~~layered portion~~
structured portions with an insulating layer therebetween.

Claim 11 (Currently amended): The nitride semiconductor light-emitting device according to claim 10, wherein the metal layer serves as a connecting electrode for connecting ~~the p ohmic electrodes~~ p-electrodes of ~~[[the]]~~ p-type semiconductor layers of the ~~layered~~ structured portions.

Claim 12 (Previously presented): The nitride semiconductor light-emitting device according to claim 9, wherein the reflection layer comprises a dielectric multilayer film.

Claim 13 (Currently amended): The nitride semiconductor light-emitting device according to claim 1, wherein the inclined ~~periphery~~ side surface has a convex surface protuberating outward.

Claims 14-28 (Cancelled):

Claim 29 (Currently amended): A semiconductor light-emitting device comprising a ~~structure~~ structured portion including a first conductivity type layer; a second conductivity type layer; and a

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luminescent layer between the first and second conductivity type layers,

wherein ~~at least part of~~ an upper surface of the structure defines a structured portion ~~having a lower surface with a width in sectional view, an upper surface with~~ has a smaller width than ~~the width of the~~ a lower surface of the structured portion in sectional view, and ~~[[a]]~~ the structured portion has inclined ~~periphery~~ side surfaces, and

wherein the ~~periphery is~~ inclined side surfaces of the structured portion are defined by first side surfaces and second side surfaces, a width of each ~~having a width increasing of the first side surfaces increases~~ from ~~[[the]]~~ a lower surface side toward the to an upper surface side, and ~~second side surfaces~~, a width of each ~~having a width increasing of the second side surfaces increases~~ from the upper surface side ~~toward~~ to the lower surface side.

Claim 30 (Currently amended): The semiconductor light-emitting device according to claim 29, wherein the first side surfaces are formed in ~~[[the]]~~ corners ~~defined by the sides of the lower surface of the structured portion.~~

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Claim 31 (Previously presented): The semiconductor light-emitting device according to claim 29, wherein the luminescent layer is disposed inside the structured portion.

Claim 32 (Currently amended): The semiconductor light-emitting device according to claim 29, wherein the lower surface has at least one of a square ~~[[or]]~~ and a polygonal shape, ~~the second side surfaces are formed on the sides of the lower surface,~~ and the first side surfaces are formed in ~~[[the]]~~ corners of the ~~lower surface~~ structured portion.

Claim 33 (Currently amended): The semiconductor light-emitting device according to claim 29, wherein the structured portion ~~is of~~ has a frustum shape.

Claim 34 (Previously presented): The semiconductor light-emitting device according to claim 29, wherein the first side surfaces are curved to be convex outward.

Claim 35 (Currently amended): The semiconductor light-emitting device according to claim 29, wherein the first side surfaces define rounded sides of the lower surface and the upper

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surface, and ~~[[the]]~~ a curvature radius of the rounded sides of the upper surface is larger than that of the lower surface.

Claim 36 (Currently amended): The light-emitting device according to claim 29, further including an electrode structure, wherein the light-emitting device has a plurality of the structured ~~portion~~ portions, and the electrode structure is provided so that the structured portions substantially simultaneously emit light.

Claim 37 (Currently amended): The light-emitting device according to claim 29, further comprising a pair of a positive electrode and a negative electrode on ~~[[the]]~~ a same surface side over the upper surface of the structured portion.

Claim 38 (Currently amended): The light-emitting device according to claim 37, wherein one of the pair of ~~[[the]]~~ electrodes covers part of the ~~periphery~~ inclined side surfaces of the structured portion.

Claim 39 (Currently amended): The light-emitting device according to claim 29, wherein the light-emitting device has a plurality of the structured ~~portion~~ portions separately disposed

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on a substrate, and further includes electrodes disposed so that the structured portions substantially simultaneously emit light.

Claim 40 (Currently amended): The light-emitting device according to claim 37, wherein the upper surface of the structured portion defines a mounting surface which opposes a mounting base when the light-emitting device is disposed on the mounting base, and wherein one of the pair of ~~[[the]]~~ electrodes is disposed on a substrate, and ~~the other~~ another electrode comprises ~~a wiring structure~~ an interconnect portion disposed on ~~[[the]]~~ a mounting base side so as to be connected to ~~[[the]]~~ upper surfaces of ~~the separately disposed~~ a plurality of ~~[[the]]~~ structured portions.

Claim 41 (Currently amended): The light-emitting device according to claim 29, further comprising a pair of electrodes disposed separately on the upper surface side of the structured portion and on the lower surface side, wherein the pair of ~~[[the]]~~ electrodes are respectively disposed on ~~[[the]]~~ a surface of the first conductivity type layer and ~~[[the]]~~ a surface of the second conductivity type layer.

Claim 42 (Currently amended): The light-emitting device according to claim 41, further comprising a light-transmissive

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insulating layer covering the ~~periphery~~ inclined side surfaces of the structured portion; and a filling member around the ~~periphery~~ inclined side surfaces with the light-transmissive insulating layer therebetween.

Claim 43 (Currently amended): The light-emitting device according to claim 41, wherein the light-emitting device has a plurality of the structured ~~portion~~ portions, and the structured portions are separated from one another by a protruding filling member.

Claim 44 (Previously presented): The light-emitting device according to claim 42, wherein the luminescent layer is disposed inside the structured portion, and the filling member protrudes below the luminescent layer toward the lower surface side of the structured portion.

Claim 45 (Currently amended): A light-emitting apparatus comprising: a light-emitting device comprising a ~~structure~~ structured portion including a first conductivity type layer; a second conductivity type layer; and a luminescent layer between the first and second conductivity type layers,

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wherein ~~at least part of an upper surface of the structure~~
~~defines a structured portion having a lower surface with a width~~
~~in sectional view, an upper surface with~~ has a smaller width than
~~the width of the a lower surface of the structured portion in~~
sectional view, and ~~[[a]]~~ the structured portion has inclined
~~periphery side surfaces,~~ and

wherein the ~~periphery is~~ inclined side surfaces of the
structured portion are defined by first side surfaces second side
surfaces, a width of each ~~having a width increasing of the first~~
side surfaces increases from ~~[[the]]~~ a lower surface side toward
~~the an upper surface side,~~ and ~~second side surfaces,~~ to a width of
each ~~having a width increasing of the second side surfaces~~
increases from the upper surface side ~~toward~~ to the lower surface
side, and

a mounting portion on which the light-emitting device is
placed, wherein the light emitting device is mounted on a support
and then placed on the mounting portion.

Claim 46 (Currently amended): The light-emitting apparatus
~~comprising: a light-emitting device comprising a structure~~
~~including a first conductivity type layer; a second conductivity~~
~~type layer; and a luminescent layer between the first and second~~
~~conductivity type layers,~~

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~~wherein at least part of the structure defines a structured portion having a lower surface with a width in sectional view, an upper surface with a smaller width than the width of the lower surface in sectional view, and a inclined periphery, and~~

~~wherein the periphery is defined by first side surfaces, each having a width increasing from the lower surface side toward the upper surface side, and second side surfaces, each having a width increasing from the upper surface side toward the lower surface side, and according to claim 45, further comprising a light-transforming member for transforming part of light emitted from the light-emitting device into light having a different wavelength.~~

Claims 47-50 (Cancelled):

Claim 51 (Previously presented): The light-emitting apparatus according to claim 46, wherein the light-transforming member comprises an aluminum garnet phosphor containing Al; at least one element selected from the group consisting of Y, Lu, Sc, La, Gd, Tb, Eu, and Sm; one of Ga and In, and at least one element selected from the rare earth elements.

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Claim 52 (Previously presented): The light-emitting apparatus according to claim 46, wherein the light-transforming member comprises a phosphor expressed by $(\text{Re}_{1-x}\text{R}_x)_3(\text{Al}_{1-y}\text{Ga}_y)_5\text{O}_{12}$ ($0 < x < 1$ and $0 \leq y \leq 1$, wherein Re represents at least one element selected from the group consisting of Y, Gd, La, Lu, Tb, and Sm; and R represents Ce or Ce and Pr).

Claim 53 (Previously presented): The light-emitting apparatus according to claim 46, wherein the light-transforming member comprises a nitride phosphor containing N; at least one element selected from the group consisting of Be, Mg, Ca, Sr, Ba, and Zn; and at least one element selected from the group consisting of C, Si, Ge, Sn, Ti, Zr, and Hf, and is activated by at least one element selected from the rear earth elements.

Claim 54 (Previously presented): The light-emitting apparatus according to claim 46, wherein the nitride phosphor is expressed by the general formula $\text{L}_x\text{Si}_y\text{N}_{(2/3x + 4/3y)}:\text{Eu}$ or $\text{L}_x\text{Si}_y\text{O}_z\text{N}_{(2/3x + 4/3y - 2/3z)}:\text{Eu}$ (L represents Sr, Ca, or Sr and Ca).